



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/726,651	12/04/2003	Marc Robelet	2003-1731A	6169

513 7590 04/10/2006

WENDEROTH, LIND & PONACK, L.L.P.  
2033 K STREET N. W.  
SUITE 800  
WASHINGTON, DC 20006-1021

EXAMINER
----------

MCMAHON, MARGUERITE J

ART UNIT	PAPER NUMBER
----------	--------------

3747

DATE MAILED: 04/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/726,651

Applicant(s)

ROBELET, MARC

Examiner

Marguerite J. McMahon

Art Unit

3747

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 and 17-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 17-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

**DETAILED ACTION*****Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1 and 17-27 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-5 of U.S. Patent No. 7,005,017 or claims 1-9 of U.S. Patent No. 6,994,758. Although the conflicting claims are not identical, they are not patentably distinct from each other because they are basically claiming the same method of manufacture except that the instant invention has claimed that the product of the method of manufacture is a piston, and has also claimed the utilization of various alternative types of steel and other alloys. It would have been obvious to one having ordinary skill in the art to modify Patent No. 7,005,017 and U.S. Patent No. 6,994,758 by utilizing the method to produce a piston, since it is well known

Art Unit: 3747

to manufacture pistons by forging, and this procedure is an improvement over forging. In addition, with respect to claims 20-25, the utilization of the various different types of steel and other alloys are art recognized alternatives, known for the same purpose, as evidenced by Applicant's claiming them in addition to the carbon steel which is claimed in claim 17 and broken down into the particulars of its composition in claim 18, and which are shown by the references.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tausig et al (6,311,759) in view of Kruse. Tausig et al teach that it is known to employ thixoforging to make articles which were previously formed by forging. Tausig et al describes the process of thixoforging an engine part such as a clutch hub, as an example. Tausig et al discusses the advantages that thixoforging has over conventional forging, and cites the following: "The forming stresses are up to four orders of magnitude lower in the semisolid state for thixotropic materials. It follows that more intricately shaped components can be formed in a single step to net or near net shape. In relation to conventional forging in particular, this also means that parts can be manufactured faster with a smaller number of processing steps and using smaller presses. Thixoforging also permits the shaping of otherwise unforgeable alloys." (See

Art Unit: 3747

column 2, lines 5-13 of Tausig et al). "Another obviously important variable is the applied load necessary for the deforming (shaping) of the semisolid charge, and this may be several orders of magnitude less in thixoforming than is required in conventional forging" (See column 9, lines 12-17 of Tausig et al).

Tausig et al shows everything except utilizing the method of manufacture to form a piston, and some of the alloys claimed. Tausig et al show that it is old to employ an alloy based on Fe-Ni (as claimed in claim 24) or an alloy based on Ni-Co (as claimed in claim 25). See the end of Table 1. Tausig et al also maintain that a large number of metal alloys may be used in the process (see column 5, lines 1-2).

Kruse shows a one-piece steel piston formed by conventional forging. The problems solved by employing the thixoforging method are problems, which are confronted by any article of manufacture, such as a piston, which is made by conventional forging, and include requiring many steps, much force, and being limited as to choice of alloys. Thus, it would have been obvious to one having ordinary skill in the art to adapt the process of thixoforging to make a piston. Pistons formed by forging are conventional, as shown by Kruse, and the process of utilizing the process of thixoforging is a relatively new, but known alternative to forging. Thus, there is no inventive step involved in adapting this known process to make a piston, instead of employing the conventional process of forging to make the piston, since it solves some of the problems of conventional forging techniques, such as providing the ability to make the piston in a process that requires fewer steps, with less force, and thus can be made more quickly, and utilizing a larger variety of alloys. In addition, with respect to

Art Unit: 3747

claims 17-23, it would have been obvious to one having ordinary skill in the art to utilize the various alloys cited, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

### ***Conclusion***

Note the previously cited reference of Uggowitzer et al (6,547,896) which at recites at column 1, lines 10-20 the following: "The forming of metal alloys in the semi-solid state by means of thixocasting, thixoforging or thixopressure injection is gaining significance as an alternative to the classic methods for producing formed pieces by means of casting, forging, and pressure injection. Thus, it is now possible to start with a material in the semi-liquid/semi-solid state...to manufacture cast or forged structural components that meet high quality demands. Particularly when it comes to the production of heavy-duty, lightweight metal formed pieces with a complex geometry, forming in the semi-solid state offers great economic advantages."

Note also the previously cited reference of Winter et al (4,457,355). Winter et al mention several materials as possibilities for the thixoforging pocess at column 11, lines 60-64, which recite: "The process and apparatus of this invention is applicable to the full range of materials as set forth in the prior art including but not limited to aluminum and its alloys, copper and its alloys and steel and its alloys."

Art Unit: 3747

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marguerite J. McMahon whose telephone number is 571-272-4848. The examiner can normally be reached on flex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yuen Henry can be reached on 703-308-1946. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
**MARGUERITE MCMAHON**  
**PRIMARY EXAMINER**